

WE CLAIM:

1. A bracket for connecting an airbag module to a structural member of an automotive vehicle, comprising:  
a first end portion attaching said bracket to said airbag module;  
5 a second end portion attaching said bracket to said structural member;  
and

a hole tuning the rigidity of said bracket to a desired rigidity, said desired rigidity promoting deformation of said bracket during impacts to said airbag module thereby absorbing impact energy and minimizing damage to said structural member and said desired rigidity inhibiting deformation during  
10 deployment of said airbag module thereby conserving deployment energy;  
wherein said hole is separate from said first end portion and said second end portion.

15 2. The bracket according to claim 1, wherein said hole comprises a plurality of said holes.

3. The bracket according to claim 1, wherein said hole comprises a slot oriented perpendicular to said airbag module.

20 4. The bracket according to claim 3, wherein said slot comprises a plurality of said slots oriented parallel to each other.

25 5. The bracket according to claim 1, wherein one of said first end portion and said second end portion comprises a slot and a slide plane, said slot being elongated between two slot ends, wherein said two slot ends are oriented in a perpendicular direction to said airbag module and said slide plane is oriented parallel to said two slot ends, said slot being attached adjacent the slot end disposed away from said airbag module, said slot and  
30 said slide plane thereby being slidable during impacts to said airbag module

thereby further absorbing impact energy and minimizing damage to said structural member.

5           6.     The bracket according to claim 5, wherein said slot is disposed on said second end portion.

          7.     The bracket according to claim 5, wherein said hole comprises a slot oriented perpendicular to said airbag module.

10          8.     The bracket according to claim 7, wherein said slot is disposed on a third end portion, said third end portion being oriented perpendicular to said second end portion.

15          9.     The bracket according to claim 8, wherein said slot comprises a plurality of said slots oriented parallel to each other.

          10.    The bracket according to claim 1, wherein:  
          a center portion is disposed between said first end portion and said second end portion, said first end portion and said second end portion and  
20           said center portion being rigid;  
          wherein one of said first end portion and said second end portion is adjustable in two directions and one of said first end portion and said second end portion is adjustable in one direction, attachment of said bracket to said airbag module and said structural member thereby being adjustable with  
25           three degrees of freedom;  
          whereby a fit between said airbag module and an instrument panel is maintained after said bracket is attached to said airbag module and said structural member and a rigid connection is formed between said airbag module and said structural member.

30          11.    The bracket according to claim 10, wherein said first end portion and said second end portion are oriented perpendicular to each other, and

wherein attachment of one of said first end portion and said second end portion comprises a first slot and attachment of one of said first end portion and said second end portion comprises a second slot with an oversized width, said first slot providing one adjustable direction along a length of said first slot and said second slot providing one adjustable direction along a length of said second slot and a second adjustable direction across said oversized width.

12. The bracket according to claim 11, wherein said hole is disposed on a third end portion, said third end portion being oriented perpendicular to said second end portion.

13. The bracket according to claim 12, wherein said hole comprises a plurality of slots oriented perpendicular to said airbag module and parallel to each other.

14. The bracket according to claim 1, wherein said first end portion comprises a slot, wherein said second end portion comprises a slot, said second end portion being oriented perpendicular to said first end portion, wherein said hole is disposed on a third end portion, said third end portion being oriented perpendicular to said second end portion, wherein said bracket is formed from a single piece of metal.

15. An assembly for connecting an airbag module to a structural member of an automotive vehicle, comprising:

an airbag module;

a structural member;

a bracket comprising two end portions and a center portion disposed between said two end portions, said two end portions and said center portion being rigid, one of said end portions attaching said bracket to said airbag module thereby forming one attachment and one of said end portions attaching said bracket to said structural member thereby forming another attachment;

wherein one of said end portions is adjustable in two directions and one of said end portions is adjustable in one direction, said attachments of said bracket to said airbag module and said structural member thereby being adjustable with three degrees of freedom;

5               whereby a fit between said airbag module and an instrument panel is maintained after said bracket is attached to said airbag module and said structural member and a rigid connection is formed between said airbag module and said structural member.

10               16. The assembly according to claim 15, wherein said two end portions are oriented perpendicular to each other, and wherein one of said attachments comprises a first slot and one of said attachments comprises a second slot with an oversized width, said first slot providing one adjustable direction along a length of said first slot and said second slot providing one  
15 adjustable direction along a length of said second slot and a second adjustable direction across said oversized width.

                  17. The assembly according to claim 16, wherein said first slot is disposed on one of said end portions of said bracket and said second slot is  
20 disposed on the other said end portion.

                  18. The assembly according to claim 15, further comprising a hole tuning the rigidity of said bracket to a desired rigidity, said desired rigidity promoting deformation of said bracket during impacts to said airbag module  
25 thereby absorbing impact energy and minimizing damage to said structural member and said desired rigidity inhibiting deformation during deployment of said airbag module thereby conserving deployment energy, wherein said hole is separate from said two end portions.

30               19. The assembly according to claim 18, wherein said hole comprises a plurality of holes oriented parallel to each other.

20. The assembly according to claim 15, wherein said bracket is made from a predetermined grade of steel thereby tuning the rigidity of said bracket to a desired rigidity, said desired rigidity promoting deformation of said bracket during impacts to said airbag module thereby absorbing impact energy and minimizing damage to said structural member and said desired rigidity inhibiting deformation during deployment of said airbag module thereby conserving deployment energy.

21. A method for installing an airbag module into an automotive vehicle comprising:

assembling an airbag module to an airbag panel, thereby forming an airbag subassembly;

assembling an instrument panel to a structural member, thereby forming an instrument panel assembly;

installing and precisely positioning said airbag subassembly to said instrument panel assembly, thereby determining a desired fit and finish between said airbag subassembly and said instrument panel assembly; and

connecting said airbag subassembly to said structural member with a rigid bracket and fasteners, thereby rigidly attaching said airbag module to said structural member.